



RECENT FISHERY PUBLICATIONS

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE BUREAU OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON, D. C. 20402. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES.
FL - FISHERY LEAFLETS.
SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.
SL - STATISTICAL LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
SSR. - FISH. - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).

| Number | Title |
|---------|---|
| FS-3743 | - Shrimp Landings, November 1964, 5 pp. |
| FS-3744 | - Gulf Coast Shrimp Data, November 1964 (Revised), 21 pp. |
| FS-3750 | - Gulf Coast Shrimp Data, December 1964, 19 pp. |
| FS-3752 | - Rhode Island Landings, November 1964, 3 pp. |
| FS-3755 | - Florida Landings, January 1965, 8 pp. |
| FS-3758 | - Virginia Landings, December 1964, 4 pp. |
| FS-3760 | - Frozen Fishery Products, February 1965, 8 pp. |
| FS-3761 | - Massachusetts Landings, August 1964, 9 pp. |
| FS-3764 | - Massachusetts Landings, September 1964, 9 pp. |
| FS-3765 | - Massachusetts Landings, October 1964, 9 pp. |
| FS-3766 | - Michigan, Ohio & Wisconsin Landings, December 1964, 4 pp. |
| FS-3768 | - New York Landings, January 1965, 4 pp. |
| FS-3769 | - Maryland Landings, January 1965, 3 pp. |
| FS-3770 | - New Jersey Landings, January 1965, 3 pp. |
| FS-3774 | - California Landings, January 1965, 4 pp. |
| FS-3775 | - Massachusetts Landings, November 1964, 9 pp. |
| FS-3777 | - Canned Fishery Products, 1964 Annual Summary, 17 pp. |
| FS-3778 | - Industrial Fishery Products, 1964 Annual Summary, 9 pp. |
| FS-3779 | - Louisiana Landings, January 1965, 3 pp. |
| FS-3781 | - Texas Landings, November 1964, 2 pp. |
| FS-3782 | - Texas Landings, December 1964, 2 pp. |
| FS-3783 | - North Carolina Landings, February 1965, 4 pp. |
| FS-3787 | - Maine Landings, January 1965, 4 pp. |
| FS-3792 | - Florida Landings, February 1965, 8 pp. |
| FS-3800 | - Fisheries of the United States, 1964 (A Preliminary Review), by Charles H. Lyles, 88 pp., illus., April 1965. This report, containing several |

features not included in the 1963 version, presents detailed information on the United States catch of fish and shellfish, production of manufactured fishery commodities, foreign trade in aquatic products, and supplies of selected fishery items (domestic production plus imports). Data in the report show that the catch in 1964 amounted to 4,523 million pounds worth \$390 million ex-vessel. Although this was the smallest catch since 1953, it was the second most valuable on record. Of the total, 2,461 million pounds were used for human food, while the remainder was used for the manufacture of industrial products and for bait and animal food. In 1964, for the second consecutive year, over half the U. S. supply of fish was of foreign origin--about 7,509 pounds. Shrimp again was the most valuable item landed by American fishermen (\$70 million), with Pacific salmon running second. Salmon, king crab, oyster, and blue crab production were all higher than in 1963. Production of canned fishery products, also higher than in the previous year, amounted to 1.1 billion pounds worth \$431 million to the packers. Record production of both fish portions and canned tuna was set. Output of fish meal, scrap, oil, and solubles, and agar-agar, buttons from mollusk shells, and other industrial products was worth \$69.6 million (an increase of \$1 million over the value in 1963). New tables include those on additions to the U. S. fleet, supply of scallop meats, supply of canned shrimp, and military purchases. For the first time, landings of tuna in American Samoa are included in the tables on supply of that species.

Wholesale Dealers in Fishery Products (Revised):

| | |
|--------|--|
| SL-26 | - Illinois (Great Lakes Area), 1963, 2 pp. |
| SL-28 | - Michigan (Great Lakes Area), 1963, 3 pp. |
| SL-29 | - Ohio (Great Lakes Area), 1963, 2 pp. |
| SL-30 | - Pennsylvania (Great Lakes Area), 1963, 1 p. |
| SL-31 | - New York (Great Lakes Area), 1963, 1 p. |
| SL-34 | - Wisconsin (Mississippi River and Tributaries), 2 pp. |
| SL-35 | - Illinois (Mississippi River and Tributaries), 2 pp. |
| SL-39 | - Tennessee (Mississippi River and Tributaries), 2 pp. |
| SL-41 | - Arkansas (Mississippi River and Tributaries), 2 pp. |
| SL-47 | - Louisiana (Mississippi River and Tributaries), 1 p. |
| SL-48 | - Indiana (Mississippi River and Tributaries), 1 p. |
| SL-162 | - Firms Producing Fish Sticks and Fish Portions (Revised), 1964, 3 pp. |

Sep. No. 736 - The U. S. Cod Fishery in the Northwest Atlantic.

Sep. No. 737 - Some Observations of the Distribution of Penaeid Shrimp in Eastern Venezuela.

FL-41 - List of State Fish Hatcheries and Rearing Stations, 29 pp., revised March 1964.

SSR-Fish. No. 493 - Salmon Escapements above Rock Island Dam, 1954-60, by Robert R. French and Roy J. Wahle, 20 pp., illus., March 1965.

SSR-Fish. No. 500 - Annual Fish Passage Report - Rock Island Dam, Columbia River, Washington, 1963, by Paul D. Zimmer and John H. Broughton, 26 pp., illus., March 1965.

SSR-Fish. No. 501 - The Fishery for Blue Crabs in the St. Johns River, Florida, With Special Reference to Fluctuation in Yield Between 1961 and 1962, by Martin E. Tagatz, 14 pp., illus., Feb. 1965.

Electrofishing Boat with Variable Voltage Pulsator for Lake and Reservoir Studies, by F. Phillip Sharpe, Circular 195, 10 pp., illus., printed, Sept. 1964.

Field Identification of the Northeastern Pacific Rockfish (SEBASTODES), by Charles R. Hitz, Circular 203, 61 pp., illus., March 1965.

The Pacific Northwest Region of the Bureau of Commercial Fisheries, Circular 207, 27 pp., illus., April 1965. Contains information on research and service programs and their recent accomplishments in the Region. Presents short sketches on the work of the biological and technological laboratories; Columbia Fisheries Program Office; and fish-passage, and exploratory fishing and gear research. Also includes accounts of the functions of the marketing, market news and statistics, enforcement, and loans and grants offices. Photos enhance the attractiveness of this circular.

THE FOLLOWING ENGLISH TRANSLATIONS OF FOREIGN LANGUAGE ARTICLES ARE AVAILABLE ONLY FROM THE ICHTHYOLOGICAL LABORATORY, BUREAU OF COMMERCIAL FISHERIES, U. S. NATIONAL MUSEUM, WASHINGTON, D. C. 20560.

Bathypelagic Fishes of the Antarctic. I--Family Myctophidae, by A. P. Andriashev, Translation No. 29, 100 pp., processed. (Translated from the Russian, Explorations of the Fauna of the Seas, I, 1962, pp. 216-294.)

Development of the Flying Fish CHEILOPOGON (PTENICHTHYS) UNICOLOR (Cuv. et Val.) (Pisces, Exocoetidae), by N. N. Gorbunova and N. V. Parin, Translation No. 32, 8 pp., processed. (Translated from the Russian, Trudy Instituta Okeanologii, vol. 62, 1963, pp. 62-67.)

The Species Composition of the Blenniidae of the Black Sea, by A. N. Svetovidov, Translation No. 31, 16 pp., processed. (Translated from the Russian, Zoologicheski Zhurnal, Akademiia Nauk SSSR, vol. 37, no. 4, 1958, pp. 584-593.)

On the Species Composition and Distribution of Sculpins of the Genus TRIGLOPS Reinh. in the Northern Seas, by A. P. Andriashev, Translation No. 30, 21 pp., processed. (Translated from the Russian, Akademiia Nauk Trudy Vsesoyuznogo Gidrobiologicheskogo Obshchestva, vol. 1, 1949, pp. 194-209.)

THE FOLLOWING PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED.

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, March 1965, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif. 90731.) California cannery receipts of tuna and tunalike fish and other species used for canning; pack of canned tuna, tunalike fish, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, and Eureka areas; California and Arizona imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; prices for fish meal, oil, and solubles; for the month indicated.

California Fishery Market News Monthly Summary, Part II - Fishing Information, March 1965, 12 pp., illus. (U. S. Bureau of Commercial Fisheries, Tuna Resources Laboratory, P. O. Box 271, La Jolla, Calif. 92038.) Contains sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists; for the month indicated.

Gulf of Mexico Monthly Landings, Production and Shipments of Fishery Products, March 1965, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Rm. 609, 600 South St., New Orleans, La. 70130.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; wholesale prices of fish and shellfish on the New Orleans French Market; Gulf menhaden landings and production of meal, solubles, and oil; fishery imports at Mobile, Ala., Morgan City and New Orleans, La., Miami, Fla., and Houston, Port Isabel, and Brownsville, Tex.; and sponge sales; for the month indicated.

List of Chicago Brokers and Importers of Fishery Products and Byproducts, 1965, 6 pp. (Market News Service, U. S. Fish and Wildlife Service, Rm. 704, 610 Canal St., Chicago, Ill. 60607.)

List of Primary Receivers of Imported Fishery Products and Byproducts at New York, 1964, 26 pp., processed, January 4, 1965. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York, N. Y. 10038.)

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, March 1965, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 S. King St., Hinton, Va. 23369.) Landings of food fish and shellfish and production of crab meat and shucked oysters in the Virginia areas of Hampton Roads, Chincoteague, Lower Northern Neck, and Lower Eastern Shore; Maryland areas of Crisfield, Cambridge, and Ocean City; and the North Carolina areas of Atlantic Beach, Beaufort, and Morehead City; together with cumulative comparative data on fishery products and shrimp production; for the month indicated.

New England Fisheries--Monthly Summary, February 1965, 22 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston, Mass. 02210.) Review of the principal New England fishery ports. Presents data on fishery landings, ports and species; industrial-fish landings and ex-

vessel prices; imports; cold-storage stocks of fishery products in New England warehouses; fishery landings and ex-vessel prices for ports in Massachusetts (Boston, Gloucester, New Bedford, and Provincetown), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut (Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and Boston Fish Pier and Atlantic Avenue fishery landings and ex-vessel prices by species; for the month indicated.

York City's Wholesale Fishery Trade--Monthly Summary--January and February 1965, 15 and 17 pp., respectively. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York, N. Y. 10038.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, including both the salt- and fresh-water sections; reports entered at New York customs district; primary wholesalers' selling prices for fresh, frozen, and selected canned fishery products; marketing trends; and landings at Fulton Fish Market docks and Stonington, Conn.; for the months indicated.

Receipts and Prices of Fresh and Frozen Fishery Products at Chicago, 1964, by C. E. Cope, 66 pp., illus., April 1965. (Fishery Market News Service, Rm. 104, 610 S. Canal St., Chicago, Ill. 60607.) Summarizes fishery products receipts and prices at Chicago during 1964. Notable events were the initiation of import data publication for the Chicago and Detroit Ports of Entry, the formation of The Midwest Federated Fisheries Council, and the opening of 2 Great Lakes fish meal plants. Statistical tables include data on receipts of fish and shellfish at Chicago wholesale market by species, states, and provinces, and by months; wholesale market price ranges by months for fresh-water fish, frozen fillets, and other frozen fish and shellfish; and imports reported by Bureau of Customs at Chicago and Detroit, by species and country, May-Oct. 1964. A stylized drawing with a fish theme, by a professional artist, on the front cover helps make this a handsome and well planned report.

Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, March 1965, 7 pp. (Market News Service, U. S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle, Wash. 98104.) Includes Seattle's landings by the halibut and salmon fleets reported through the exchanges; landings of halibut reported by the International Pacific Halibut Commission; landings of otter-trawl vessels reported by the Fishermen's Marketing Association of Washington; local landings by independent vessels; coastwise shipments from Alaska scheduled and non-scheduled shipping lines and ferries; imports from British Columbia via rail, motor truck, shipping lines, and ex-vessel landings; and imports from other countries through Washington customs district; for the month indicated.

THE FOLLOWING SERVICE PUBLICATION IS FOR SALE AND IS AVAILABLE FROM THE SUPERINTENDENT OF DOCUMENTS, U. S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C. 20402.

Recipes from the Great Lakes, Circular 201, 16 pp., illus., printed, 1965, 25 cents. Presents new methods of achieving culinary magic in preparing and cooking fish from the Great Lakes. Bureau of Commercial Fisheries home economists have de-

veloped 24 new recipes and serving ideas for lake and river fish such as yellow perch, catfish, whitefish, pickerel, smelt, buffalofish, and other Great Lakes species. Illustrations are in color. The Great Lakes have been a source of food since America's earliest days. The region's fishery industry reached peak development at the turn of the 20th century and, despite a decline in recent years, provides nearly 100 million pounds of choice fish annually.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

ALASKA:

A Technical Study of Investment Opportunities in Southeastern Alaska with an Evaluation of the Economic Impact of the "Marine Highway" System, 250 pp., illus., processed, Jan. 1965, \$1.25. Area Redevelopment Administration, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Includes, among other specific short and medium range industrial and commercial opportunities in Southeastern Alaska, a prospectus on a plant for processing for export canned, frozen, and packaged fishery products, employing 20 to 25 skilled, semi-skilled, and unskilled workers.

AMINO ACIDS:

"The amino acid sequence in fin-whale insulin," by Hiroko Hama and others, article, Journal of Biochemistry, vol. 56, Sept. 1964, pp. 285-293, printed. The Japanese Biochemical Society, c/o Department of Biochemistry, Faculty of Medicine, Tokyo University, Bunkyo-ku, Tokyo, Japan.

"Structure of sperm whale myoglobin. I--Amino acid composition and terminal groups of the chromatographically purified protein," by A. B. Edmundson, article, Chemical Abstracts, vol. 58, June 24, 1963, Abstract No. 14346c, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

ANTIBIOTICS:

Antibiotics and the Preservation of Wet Fish, Torry Advisory Note No. 19, 8 pp., printed, Sept. 1964. Torry Research Station, Department of Scientific and Industrial Research, 135 Abbey Rd., Aberdeen, Scotland.

AUSTRALIA:

Annual Report for 1963/64, 187 pp., printed, 1964. Commonwealth Scientific and Industrial Research Organization, 314 Albert St., East Melbourne C2, Victoria, Australia.

BASS:

A Bibliography of the Striped Bass or Rockfish, *ROCACUS SAXATILIS* (Walbaum), by Hensley C. Woodbridge and Hunter M. Hancock, 23 pp., printed, 1964, \$1. Sport Fishing Institute, Bond Bldg., Washington, D. C.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

BOTULISM:

"Botulinum toxin, type A: effects on central nervous system," by E. H. Polley and others, article, *Science*, vol. 147, no. 3661, Feb. 26, 1965, pp. 1036-1037, illus., printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

BUTTERFISH:

"Study on the larvae of fishes in the northeastern sea area along the Pacific Coast of Japan. III--Takabe (butter-fish), *Labracoglossa argentiventris* Peters," by Shigeru Odate, article, *Bulletin of the Tohoku Regional Fisheries Research Laboratory*, vol. 21, 1962, pp. 63-70, illus., printed in Japanese with English summary. Tohoku Regional Fisheries Research Laboratory, Shiogama, Miyagi, Japan.

CALIFORNIA:

California Fish and Game, vol. 51, No. 2, April 1965, 64 pp., illus., printed, single copy 75 cents. Office of Procurement, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807. Includes, among others, articles on: "Survey on the marine environment offshore of San Elijo Lagoon, San Diego County," by Charles H. Turner, Earl E. Ebert, and Robert R. Given; and "Developmental temperature tolerance and rates of four Southern California fishes, *Fundulus parvipinnis*, *Atherinops affinis*, *Leuresthes tenuis*, and *Hypsoblennius* sp.," by Clark Hubbs.

CANADA:

Annual Report for the Fiscal Year Ended March 31, 1964, 108 pp., printed, 1964. Department of Lands and Forests, Edmonton, Alberta, Canada. Contains a chapter on fish and wildlife.

Annual Report 1963/64, 106 pp., printed, 1964. Department of Mines and Natural Resources, Winnipeg, Manitoba, Canada. Contains report on fisheries.

Annual Report 1963/64, 34 pp., printed, 1964. Department of Trade and Industry, Halifax, N. S., Canada. Contains chapter on fisheries.

Annual Report for 1963/64, 179 pp., printed, 1964. Department of Natural Resources, Regina, Saskatchewan, Canada. Contains report on the Fisheries Branch.

Annual Report, 1964, 23 pp., printed, 1964. Prince Rupert Fishermen's Co-operative Association, Prince Rupert, B. C., Canada.

Fisheries Council of Canada, Annual Review 1965, 92 pp., illus., printed. Fisheries Council of Canada, Rm. 703, 77 Metcalfe St., Ottawa 4, Canada. Includes, among others, articles on: "North American Fisheries Conference"; "Fisheries of South Africa," by H. V. Dempsey; "Icelandic fishing fleet," by M. Elisson; "F. A. O. and U. N. S. F.," by F. E. Popper; "Atlantic sealing industry," by D. E. Sergeant; "Canada's commercial fisheries," by F. W. Wallace; "Fisheries technology in B. C.," by R. L. Payne; and "Commercial fisheries--1964," by J. N. Lewis.

Fisheries Statistics of British Columbia, 1964 (Preliminary), 13 pp., processed, April 1965. Canadian Department of Fisheries, 1155 Robson St., Vancouver 5, B. C., Canada.

Fishes of Northern Ontario, North of the Albany R. by R. A. Ryder, W. B. Scott, and E. J. Crossman. Contribution No. 60, 30 pp., illus., printed, 1964, C\$0.75. Royal Ontario Museum, University of Toronto, Toronto, Canada.

Pecheries Commerciales, 1963 (Commercial Fisheries, 1963), 64 pp., illus., printed in French and English. Quebec Bureau of Statistics, Department of Industry and Commerce, Quebec, Canada.

Review of the Fisheries, 1964, 9 pp., printed, 1964. Department of Fisheries, St. John's, Newfoundland, Canada.

Survey of Great Slave Lake Domestic Fishery in 1961 and 1962. I--1962 Census and Fish Supply in North Arm, by J. J. Keleher, Manuscript Report Series (Biological) No. 800, 71 pp., printed, 1964. Biological Station, Fisheries Research Board of Canada, London, Ontario, Canada.

CARP:

Zeitschrift für Fischerei und deren Hilfswissenschaften, vol. 12, nos. 8, 9, 10, Dec. 1964, 240 pp., illus., printed in German with English abstracts. Neumann Verlag, Dr. Schmincke Allee 19, Radebeul 1, German Democratic Republic. Some of the articles are: "Schadwirkung von kupfersulfat, zinksulfat, kaliumcyanid, ammoniak und phenol gegenüber karpfen (*Cyprinus carpio*) vom wasser her und nach peroral applikation" (The toxic effects of cuprous sulphate, zinc sulphate, potassium cyanide, ammonia, and phenol on carp when absorbed from water and when administered by mouth), by Dietwart Nehring; and "Vergleichende anatomisch-physiologische untersuchungen an wild- und teichkarpfen (*Cyprinus carpio*)" (Comparative studies of anatomical-physiological differences in wild and pond carp), by Werner Steff

CEYLON:

Draft 10-Year Plan for the Development of the Fishing Industry, 117 pp., printed, 1965. Ceylon Fisheries Corporation, Galle Face, Colombo 3, Ceylon. Since its establishment on Oct. 1, 1964, the Board of Directors of the Ceylon Fisheries Corp. has drawn up a long-term plan for the development of the country's fisheries. Government policy was expressed in a speech by the Governor General of Ceylon on Aug. 9 of this year: "A programme will be implemented (which) will include the building up of a scheme for deep sea fisheries on a modern scale with group related fisheries activities so that the country will be in a position to supply all its local requirements for fish and fish products. These measures will ameliorate the conditions of those engaged in the fishing industry and it is the intention of My Government to provide housing and other facilities for them." This report contains plans for: the production of fishery products--vessels, harbors, and increased landings for domestic consumption and export of fish and shellfish; investment (Government, corporation, and private) in the industry; better incomes and employment for fishermen; and financing of the development pro

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

use of Government revenue and a minimum reliance on credit. Included are many statistical tables showing projected data for 1965-1975.

CHESAPEAKE BAY:

Chesapeake Science, vol. 6, no. 1, March 1965, 72 pp., illus., printed, single copy 75 cents. Chesapeake Biological Laboratory, Natural Resources Institute, University of Maryland, Solomons, Md. Some of the articles are: "Relationships between *Bucephalus* sp. and *Crassostrea virginica*: histopathology and sites of infection," by Thomas C. Cheng and Richard W. Burton; "Seasonal setting patterns of five species of bivalves in the Tred Avon River, Maryland," by William N. Shaw; "Supplemental feeding of oysters with starch," by Dexter S. Haven; and "Infection experiment in nature with *Dermocystidium marinum* in Chesapeake Bay," by J. D. Andrews.

CHILLING:

Cooling and Chilling of Fresh Fish on Board, by Tazaburo Noguchi, Fishery Research Series 7, 35 pp., printed in Japanese, Feb. 1965. Japan Fisheries Resource Conservation Association, 6th Fl., Kenkoku Choson Kaikan Bldg., 1-17, Nagata-cho, Miyoda-ku, Tokyo, Japan.

COELACANTH:

Coelacanth displayed for first time in U. S.," article, Science Newsletter, vol. 87, no. 13, March 27, 1965, p. 199, illus., printed, single copy 15 cents. Science Service, 1719 N St. NW., Washington, D. C. 20036.

CONSUMER PREFERENCE:

Why consumers purchase frozen fillets, sticks, portions," article, Quick Frozen Foods, vol. 27, Oct. 1964, pp. 80-83, printed. E. W. Williams Publications, Inc., 82 Wall St., New York, N. Y. 10005.

CONVERSION FACTORS:

Measures, Stowage Rates and Yields of Fishery Products, by J. J. Waterman, Torry Advisory Note No. 12, 12 pp., illus., printed, Aug. 1964. Torry Research Station, Department of Scientific and Industrial Research, 135 Abbey Rd., Aberdeen, Scotland.

CRAB MEAT:

The browning of canned crab meat. III--The browning of canned crab as dependent upon the time of leaving the raw crab without carapace but uncanned," Yoshio Hagasawa, article, Chemical Abstracts, vol. 58, April 29, 1963, Abstract No. 9558c, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

CUBA:

Translations on Cuba, No. 221 (Cuban Fisheries), FIS 28082, 77 pp., illus., printed, Dec. 31, 1964, (Translated from the Spanish, Las Pesquerias de Cuba, no. 20, Feb. 1964.) Clearinghouse, U. S. Department of Commerce, Springfield, Va. 22151.

DENMARK:

Yearning for 1964 (Annual Report to the Danish Fishing Industry with an English Translation of the Main Experimental Results), 40 pp., illus., printed in Danish with English summary, Feb. 1965. Fiskeriministeriets Forsøgslaboratorium, Copenhagen, Denmark. Studies include research on fresh fish--

rigor mortis of trout, electric freshness tester, iced herring, and vacuum-packed chilled fish; frozen fish--thawing of block-frozen fish, filleting of thawed raw fish, and peeling of frozen whole shrimp; semipreserved canned fish--spiced herring; sterile canned fish--effect of can lacquers on corrosion, mackerel in tomato sauce, addition of citric acid to canned shrimp; fish meal and oil--removal of odor and flavor from fish meal, composition of fat in fish meal, and fish oil in sow fodder; and separation of fish silage fractions.

DOLPHIN:

Experience in Commercial Fishing for Dolphin, USSR, by A. I. Petrenko, TT 64-51963, 14 pp., illus., printed, Dec. 17, 1964, \$1. (Translated from the Russian, Rybnoe Khoziaistvo, no. 3, 1962.) Clearinghouse, U. S. Department of Commerce, Springfield, Va. 22151.

ECUADOR:

Apuntes e Informaciones sobre las Pesquerias en la Provincia de Esmeraldas (Notes and Information on the Fisheries in the Province of Esmeraldas), Boletín Informativo, vol. 1, no. 6, 1964, 37 pp., illus., printed in Spanish, single copy S/. 18.00 (US\$1). Instituto Nacional de Pesca del Ecuador (Biblioteca), Casilla 5918, Guayaquil, Ecuador.

ESTUARIES:

"Estuaries--life-lines to the sea," by Will T. Johns, article, The Maryland Conservationist, vol. 42, no. 1, Jan.-Feb. 1965, pp. 2-5, illus., printed, single copy 25 cents. Maryland Game and Inland Fish Commission, State Office Bldg., P. O. Box 231, Annapolis, Md.

FAROE ISLANDS:

"The economic development in the Faroes in 1964," 4 pp., article, Faroes in Figures, no. 29, Mar. 1965, pp. 2-3, 6-7, printed. Føroya Fiskasøla, Torshavn, Faroe Islands.

FILLETS:

A Report to the Fishing Industry on the Identification of Fresh and Frozen Fillets of Cod, Haddock and Other Species, by P. H. Odense, C. W. Shinnars, and T. C. Leung, New Series Circular No. 20, 2 pp., printed, March 29, 1965. Technological Station, Fisheries Research Board of Canada, Halifax, N. S., Canada. It is sometimes desirable to determine the species of a fresh or frozen fillet, according to this leaflet. Some fillets, for instance cod and haddock, are very similar in appearance and it is difficult to distinguish between them by visual observation alone. However, these and other fillets readily can be identified by the characteristic patterns formed when their proteins are subjected to a procedure known as starch gel electrophoresis. The principles and details of that procedure are described.

FINLAND:

"Jaameri--miesten meri" (Arctic seas--fishermen's seas), by Reino Eloranta, article, Suomen Kalastuslehti, no. 5, 1964, pp. 127-130, illus., printed in Finnish. Suomen Kalastusyhdistyksen, Fabianinkatu 5 A 7, Helsinki, Finland.

"Läckra skaldjur" (Delicious shellfish), article, Fiskeritidskrift for Finland, vol. 8, no. 3-4, 1964, pp. 80-

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

84, illus., printed in Swedish. Fiskeriforeningen i Finland, Fabiansgatan 5 A 7, Helsinki, Finland.

FISH:

Boy's Book of Fishes, by Edward C. Migdalski, 172 pp., illus., printed, 1964, \$5. Ronald Press, 15 E. 26 St., New York, N. Y. 10010. Discusses natural history and biology of common fish species in bodies of waters in and around the United States. For grades 6 to 8.

FISH BEHAVIOR:

Biological Problems in Acoustic Systems (Behaviour of Fishes with Special Reference to their Sensory Capacities), Final Report to Office of Naval Research, 12 pp., printed, 1964. University of Maryland, College Park, Md.

"K izucheniyu prichin sutochnykh vertikal'nykh migratsii ryb" (Causes of daily vertical fish migration), by S. G. Zusser, article, Trudy Soveshchaniia Ikhtiologicheskoi Komissii Akademii Nauk SSSR, vol. 8, 1958, pp. 115-120, printed in Russian. Ikhtiologicheskoi Komissii, Izdatel'stvo Akademii Nauk SSSR, Podsosenskii per. d. 21, Moscow B-64, U.S.S.R.

FISHING WITH LIGHTS:

Purse Seining with Lights from a Motor Dory, by V. M. Kirrilov, Translations (New Series) No. 41, 7 pp., printed, 1964. (Translated from the Russian, Rybnoe Khozaiastvo, no. 1, 1961, pp. 27-31.) Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

"Studies on the fluorescent color-lamp for attracting of fish. II--Underwater distribution of color light density and the fish schools aggregated," by Toshiro Kuroki, Hiroshi Nakayama, and Kiyohisa Ueno, article, Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 14, no. 4, 1964, pp. 215-235, printed. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

FISH MEAL:

"Investigations on the loss of nutritive value occurring during storage of raw material for fish meal," by H. J. Papenfuss, Fischereiforschung, vol. 5, 1962, pp. 38-41, printed in German. Institut für Hochseefischerei und Fischverarbeitung, Rostock-Marienehe, German Democratic Republic.

"Protein quality of feeding-stuffs. 2--The comparative assessment of protein quality in three fish meals by microbiological and other laboratory tests, and by biological evaluation with chicks and rats," by J. Bunyan and A. A. Woodham; "3--Comparative assessment of the protein quality of three fish meals given to growing pigs," by R. S. Barber and others, articles, British Journal of Nutrition, vol. 18, no. 4, 1964, pp. 537-554, printed. Cambridge University Press, 32 E. 57th St., New York, N. Y. 10022.

FLAVOR:

Substances Responsible for Taste and Smell in Fish, by F. Bramstedt, FRB Translation Series No. 235, 14 pp., printed. (Translated from the German, Archiv für Fischereiwissenschaft, vol. 8, pp. 94-103.) Fisheries Research Board of Canada, Sir Charles Tupper Bldg., Riverside Dr., Ottawa, Canada.

FLOUNDER:

"Lipids of flounder. II--Conjugated lipids from flounder flesh, Hippoglossoides dubius," by Hisanao Iga, Igaashi and others, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 29, Sept. 1963, pp. 865-869, printed. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shibagandori 6, Minato-ku, Tokyo, Japan.

FOOD AND AGRICULTURE ORGANIZATION:

Council, Food and Agriculture Organization of the United Nations, Forty-Fourth Session, Rome, 21 June 1965--Committee on Fisheries, CL 44/11, 10 pp., processed, Feb. 25, 1965. Council of the Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. The paper presents proposals for the establishment of a permanent Committee on Fisheries for consideration by the Council of the FAO at its meeting on June 25, 1965. It discusses functions of the Committee, proposed Constitutional bases for the Committee, and recommendations for alternate procedures to be followed in its establishment by the Conference. Included is a list of relevant documents, a new Rule dealing with the Committee on Fisheries, and an international convention on cooperation in fisheries; the last two for possible adoption by the FAO.

FOREIGN TRADE ZONES:

Small Business Opportunities in Foreign Trade Zones and International Business, by William A. Dymally, Management Research Summary, 4 pp., processed, 1964. Small Business Administration, Washington, D. C. 20416.

FRANCE:

Bulletin d'Information, no. 18, March 1965, 38 pp., illus., processed in French. Comité Local des Pêches Maritimes de Bayonne, Bayonne, France. Contains among others, these articles: "La pêche en 1964 dans le quartier de Bayonne" (The fishery in 1964 in the Bayonne area); "Bilan de l'exercice 1964 du plan de relance" (Balance sheet for the fiscal year for rehabilitation plan); "Thermocline et pêche du thon au large de la Côte Occidentale d'Afrique" (Thermocline and the tuna fishery off the west coast of Africa); "Les campagnes de la sardine et de l'anchois" (The sardine and anchovy seasons); and "La campagne thonière Africaine" (The African tuna season).

"Cultiver la mer, pour accroître la production de pêche" (Cultivating the sea to increase fishery production), by J. E. Shelbourne, article, La Pêche, no. 44, no. 1044, March 1965, pp. 161-164, illus., printed in French, single copy 14 F (about US\$2.85). Les Éditions Maritimes, 190, Blvd. de la Seine, Paris 8e, France.

FREEZE-DRYING:

How Freeze-Drying Works, by Kermit Bird, 10 pp., processed, 1965. Marketing Economics Division, Economic Research Service, U. S. Department of Agriculture, Washington, D. C. 20250.

FREEZING:

"Freezing of fish in vertical plate freezers," by J. F. Merritt and J. Templeton, article, Modern Refrigeration, vol. 67, no. 796, July 1964, pp. 706-712, illus., printed. Refrigeration Press Ltd., Maclaren House, 131 Great Suffolk St., London SE1, England.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

DZEN FISH:

"Are IQF fish fillets the next major trend?" article, Quick Frozen Foods, vol. 27, Oct. 1964, pp. 235-236, printed, E. W. Williams Publications, Inc., 82 Wall St., New York, N. Y. 10005.

"Influence of freezing rate on fish quality," by D. G. Kutov, article, Kholodil'naiia Tekhnika, no. 1, 1965, p. 67, printed in Russian, single copy 60 kop. (about 10 U. S. cents). Four Continent Book Corp., 822 Broadway, New York, N. Y. 10003.

BOOK:
Handbook on Fishery Gear, Net Material, and Fishing Equipment, by N. N. Andreev, 504 pp., printed in Russian, 1962. Pishchepromizdat, Moscow, U.S.S.R.

GENERAL:

The Bountiful Sea, by Seabrook Hull, 352 pp., illus., printed, 1964, \$6.95. Prentice-Hall, Inc., Englewood Cliffs, N. J. 07632. The sea through the centuries has always been a mysterious world, but as man turns more and more to the sea many of its mysteries are being solved with knowledge. The author in his introduction very ably points out that the book "... is a history of man and the sea since before the days of Aristotle. It is a primer on oceanography, demonstrating the vastness and complexity of this realm and its control over the world of land and air in which we live. If it has one fundamental purpose it is to present an overall picture of the total effort and the inextricable interrelationship of science and technology with all of the many things we would do in the sea. In turn, it seeks to relate these things to people--individuals who, in the final analysis, must accept or reject the challenge." In the first three chapters ("Earth's Last Great Frontier," "From the Beginning, The Sea," and "Out of the Darkness, Into the Depths") the author discusses man's relationship to the sea and his quest for knowledge about the mysterious world of the sea throughout history. The balance of the book deals with the future of the sea; its riches; living, working, and playing beneath the sea; what we can learn from the creatures of the sea; and what is needed to garner the bounty of the sea. The curious chapters delve into the pulses of the sea, the living sea and its challenge, the war of sound and darkness, mobilization of forces to exploit its riches, the profit and adventure to be found in the sea, and what the bountiful sea can provide. The next chapter deals with "Men of Conquest." In discussing the mobilization of forces, the author describes the sea as "a cornucopia of raw materials for man's industries, food for his stomach, health for his body, challenges to his mind, and inspiration for his soul." In essence the author points out that the food that will be needed to feed the exploding world population is to be found in the sea. Looking into the crystal ball, he foretells the day when nets and hooks in harvesting the sea will give way to mobile screens and electrical fields to lure or herd the desirable size and species of fish into great suction hoses or right up through an underwater hatch into the holds of fishing vessels. But he does warn that man must practice conservation if he is to preserve the bounty of the sea for future generations. The sea as a new source of fresh water and the world's greatest known reserve of raw materials (such as diamonds, gold, coal, iron ore, tin,

sulphur, oil etc.) is vividly explained. Illustrated with some excellent black and white photographs, the book also contains references and suggestions for further reading and a good index. Most of the book is written in such a way that it is easy reading. Businessman, scientist, scholar, researcher, sport or commercial fisherman, and anyone who has any interest at all in the sea will find the book fascinating reading and a treasure house of facts about the sea.

--J. Pileggi

The First Book of Fishes, by Jeanne Bendick, 72 pp., illus., printed, \$2.65, 1965. Watts, Franklin, Inc. 699 Madison Ave., New York, N. Y. 10021. Tells children about a variety of fish.

GERMAN FEDERAL REPUBLIC:

Market Factors in the Federal Republic of Germany, by Melissa F. Wells and Margot W. Zener, OBR 65-16, 8 pp., printed, March 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

HALIBUT:

Pacific Halibut Fishery Regulations (Effective March 23, 1965), 13 pp., illus., printed. International Pacific Halibut Commission, Fisheries Hall No. 2, University of Washington, Seattle, Wash. 98105.

HERBICIDES:

"Evaluation of herbicides for control of aquatic weeds," by R. D. Blackburn and L. W. Weldon, article, Annual Report of the Florida Agricultural Experiment Stations, pp. 257-267, printed, 1962. Agricultural Experiment Station, University of Florida, Gainesville, Fla.

HERRING:

"A contribution to the classification of Clupeoid fishes," by P. J. P. Whitehead, article, Annals and Magazine of Natural History, vol. 5, no. 60, 1962, pp. 737-750, printed. Taylor and Francis Ltd., Red Lion Court, Fleet St., London EC4, England.

Distribution of Herring of the Atlanto-Scandian Stock, by J. G. Friedland, I. I. Osetinskaia, and T. A. Bernikova, Translations (New Series) No. 53, 8 pp., illus., processed, 1964. (Translated from the Russian, Soviet Fisheries Investigations in Northern European Seas, Moscow, 1960, pp. 379-389.) Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

"Silakkatukimukset II" (Herring study II), by Veikko Sjöblom, article, Suomen Kalastuslehti, no. 10, 1964, pp. 257-268, illus., printed in Finnish. Suomen Kalastusyhdistyksen, Fabianinkatu 5 A 7, Helsinki, Finland.

"Strömmingsundersökningarna" (Investigations of the Baltic herring), by Veikko Sjöblom, article, Fiskeritidskrift for Finland, vol. 8, no. 5-6, 1964, pp. 113-129, illus., printed in Swedish. Fiskeriforeningen i Finland, Fabiansgatan 5 A 7, Helsinki, Finland.

ICHTHYOLOGY:

An Examination of Certain Aspects of the Methodology and Theory of Fisheries Biology, by G. L. Kesteven,

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

vol. 137-B, 21 pp., printed, 1964. Council for Scientific and Industrial Research, Division of Fisheries, Cronulla, N. S. W., Australia.

IMPORTS:

U. S. Imports of Merchandise for Consumption (SITC Group Totals: 1 Digit, 2 Digit, 3 Digit; Commodity by Country, Area by Commodity, Country by Commodity), December 1964, FT 125, 490 pp., processed, April 1965, single copy \$1.50. Bureau of the Census, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) The statistical tables include imports of fish, shellfish, and processed fishery products, country by commodity and commodity by country for December 1964 and totals for 1964.

INTERNATIONAL AGREEMENTS:

Fisheries, King Crab, Agreement between United States and Japan, Effected by Exchange of Notes Signed Washington Nov. 25, 1964 (Entered into Force Nov. 25, 1964), Treaties and Other International Acts Series, No. 5688, 7 pp., printed, 1964, 5 cents. Department of State, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

ITALY:

Annuario Statistico della Pesca e della Caccia, 1963 (Statistics Annual for Fishing and Hunting, 1963), vol. 11, 1963, 169 pp., illus., printed in Italian, 1964. Istituto Centrale di Statistica, Repubblica Italiana, Rome, Italy. Contains 1962 data with comparisons on fishery landings; and receipts, sales, and average prices of fishery products at principal markets. Also contains hunting data.

Bolletino di Pesca, Piscicoltura e Idrobiologia, vol. 18, no. 2, July-Dec. 1963, 149 pp., illus., printed in Italian with French and English summaries, single copy L. 1,200 (about US\$1.90). Laboratorio Centrale di Idrobiologia, Piazza Borghese, 91, Rome, Italy. Among the articles are: "Studi sulla biologia e pesca di *Xiphias gladius* (Nota II)" (Studies on the biology and fishery of *Xiphias gladius*--swordfish), by Cavaliere Antonino; and "L'ostricoltura nello Stagno di Thau" (Oyster culture in Thau Pond), by Matta Francesco.

JAMAICA:

Foreign Trade Regulations of Jamaica, by Walter Haidar, OBR 65-15, 8 pp., printed, March 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

JAPAN:

Bulletin of the Faculty of Fisheries, Nagasaki University, no. 18, Feb. 1965, 136 pp., illus., printed in Japanese with English summaries. The Faculty of Fisheries, Nagasaki University, Nagasaki, Japan. Some of the articles are: "On some shrimps from the Philippine Sea" (in English), by Y. Yokoya and K. Shibata; "Studies on the little toothed whales in the west sea area of Kyushu. XII--*Neomeris phocaenoides*, so-called Japanese 'sunameri,' caught in the coast of Tachibana Bay, Nagasaki Pref.," by K. Mizue, K. Yoshida, and Y. Masaki; "Studies on

Penaeus orientalis Kishinouye. II--Morphologic classification of the ovarian eggs and the maturity of the ovary," by M. Oka and S. Shirahata; and "Studies on the metabolism of oxalic acid in fish muscle. Seasonal variations and influence of temperature on oxalic acid content in fish muscle," by M. Yasuo, Yamazoe, and T. Ishihara.

Foreign Trade Regulations of Japan, by Lois J. D. Nauw, OBR 65-11, 12 pp., printed, March 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

Hokusuishi Geppo (Monthly Report of the Hokkaido Fisheries Research Laboratory), vol. 22, no. 2, 1965, 58 pp., illus., printed in Japanese, single copy 100 yen (about 28 U. S. cents). Hokkaido Central Fisheries Research Laboratory, 238-banchi, Fannaka-cho, Yoichi, Hokkaido, Japan. Includes articles on "Life of the dab of Ishikari Bay and the research by Y. Kaga and K. Sugama; "Fishes in the near seas of Hokkaido--the flatfishes," by T. Ueno; "Improving the bleaching process of frozen groundlings on the possibility of economizing on water," by T. Fukumi and others; "Mold stains on fishery products and their prevention," by T. Sato and Y. Okuda.

Laws and Regulations Relating to Organizations of the Ministry of Agriculture and Forestry, 178 pp., printed in Japanese, Aug. 31, 1964. Documents Section, Secretariat, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan.

Long-Range View of Coastal Fishery Production: Regional Characteristics, Research Data 63-8, printed in Japanese, May 1964. Research and Reference Bureau, National Diet Library, Tokyo, Japan.

"Le nouvel entrepôt frigorifique de Kanagawa autorise le stockage de 5000 tonnes de thon" (The new cold-storage warehouse at Kanagawa, Japan, enables the storage of 5,000 metric tons of tuna), La Pêche Maritime, vol. 44, no. 1044, March 1965, pp. 179-180, illus., printed in French, single copy 14 F (about US\$2.85). Les Éditions Maritimes, 190, Blvd. Haussmann, Paris 8e, France.

Report on Investigations on Young Fish and Fisheries Basic Data for Improvement of Coastal Fishery Management, 266 pp., printed in Japanese, Nov. 1964. Investigation and Research Division, Fisheries Agency, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan.

Available from the Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shirogandori 6, Minato-ku, Tokyo, Japan. Printed in Japanese with English abstracts.

Bulletin of the Japanese Society of Scientific Fisheries, vol. 30, no. 10, Oct. 1964, 82 pp., illus. C. among others, articles on: "Studies on the bait trolling. I--On the fishing effect of ground bait on bonito trolling," by Shozzyuro Okabayasi; "Studies on the propagation of an abalone, *Haliotis diversus supertexta* Lischke. II--On the development," by Toshio Oba; "On the decline in the catch per

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

... fishing effort and the diminution of average body length due to the exploitation of a virgin stock," by Tasaie Kawakami and Takeru Kitahara; "On the oil fish meal. I--Oxidation of oil in manufacturing brown fish meal and the effect of antioxidant application thereon," by Kenzo Toyama and others; "On a new amino acid, S-hydroxymethyl-L-Homocysteine isolated from *Chondrus ocellatus*," by Mizuo Takagi and Ayako Okumura; "Studies on the retention of meat color of frozen tuna. I--Absorption spectra of the aqueous extract of frozen tuna meat undergoing discoloration," by Masamichi Bito; and "Mechanics of towed nets," by Tasaie Kawakami.

..., vol. 30, no. 11, Nov. 1964, 81 pp., illus. Includes, among others, these articles: "On the relationship between activity of Japanese spiny lobster and under water light intensity," by Itsuo Ito and Naonori Ishiwata; "Studies on the bait in trolling. II--On the death of live bait and missing hook in tuna long-line fishery," by Syozyuro Kobayashi; "Free amino acids in the muscle of a species of fish," by Shoji Konosu, Muzaffer Bay, and Yoshiro Hashimoto; and "Vitamins in *Mitsuwobushi* (dried skipjack)," by Masaaki Yanase, Tsuyuki Shimizu, and Hideo Higashi.

..., vol. 30, no. 12, Dec. 1964, 116 pp., illus. Includes, among others, articles on: "Experimental use of fish pumps. V--Transference of living fish and autopsy of pumped fish," by Chosei Shimuta and others; "A study on the growth and age of the jack mackerel in the East China Sea" and "Studies on the resources of the jack mackerel, *Trachurus japonicus* (Temminck et Schlegel) in the East China Sea. I--Survival rate," by Fumio Mitani and Etsuko Ida; "Studies on muscle of aquatic animals. XXXXIII--Creatine and Creatinine contents in fish muscle extractives," by Morihiko Sakaguchi, Masao Hujita, and Wataru Simidu; "XXXIV--Creatine and trimethylamine Oxide, creatine, creatinine and nucleotides in fish muscle extractives," by Morihiko Sakaguchi and Wataru Simidu; "Bacterial studies on the spoilage of fish sausage. I--Causative bacteria of spot-forming deterioration; II--Causative bacteria of type of gas-forming deterioration," by Motonobu Yokoseki and Yoko Okawa; "Studies on protein denaturation of frozen fish. A comparison between super rapid freezing by liquid nitrogen (-196°C) and air (-20°C) freezing," by Takao Suzuki, Koichi Kanna and Takeo Tanaka; and "Studies on collagen in aquatic animals. I--On the modification of collagen by enzymatic treatment," by Ginoru Kubota and Hideo Tajima.

... from Bulletin of the Tohoku Regional Fisheries Research Laboratory, vol. 21, 1962, printed in Japanese with English summaries. Tohoku Regional Fisheries Research Laboratory, Shiogama, Miyagi, Japan.

... situations in the abundance of saury on the northern sea area in Japan. I," by Hideyuki Hotta, pp. 1-20, illus.

... the relation between the pattern of the Kuroshio current in spring and summer and the saury fishing conditions in fall," by Shin-Ichi Fukushima, pp. 21-22, illus.

KENYA:

Preliminary Survey of Bottom Fishing on the North Kenya Banks, by J. F. C. Morgans, Fishery Publications No. 21, 98 pp., illus., processed, 1964, 30s. 8d. (\$6 when ordered in the United States). British Colonial Office, London, England. (For sale by British Information Services, 845 Third Ave., New York, N. Y. 10022.) Contains an account of findings made by 3 research vessels on 15 cruises to the North Kenya Banks, 1954-59. Those findings are presented in sections on: charting--topography of the bank system, cartographic techniques, and other topics; weather, sea, and ship's drift; fishing--gear, effort, catch; and biology--breeding, feeding, parasites. Lists are given of the species caught, their average weights, and the sizes at which sexual maturity is reached. The Banks are a unique expansion of the continental shelf off tropical East Africa, according to the author. The most important fish found above the main thermocline were snappers, rock cod, and scavengers (Lehrinidae). There was some evidence that most species exist in loose schools that tend to coalesce as individuals approach sexual ripeness.

KOREA:

"Government financial assistance schemes," by Ro, Jai Dong, article, IPFC Current Affairs Bulletin, no. 39, April 1964, pp. 1-5, printed. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, Maliwan Mansion, Phra Atit Rd., Bangkok, Thailand. Outlines current Republic of Korea governmental action and plans to finance the fisheries industry by a system of loans, subsidies, and grants. Grants of up to 80 percent of costs may be made to individuals or cooperatives for establishing ice-making, freezing, cold-storage, and consignment-sale facilities; for breakwaters or piers recognized as a public need; and for deep-sea fishing vessels, processing plants, and other facilities. The mutual relief insurance system is also described and results of its operation to date are tabulated.

LOBSTERS:

"Lobsters to test new trap this winter," article, Canadian Fisherman, vol. 51, Jan. 1964, pp. 19, 26, printed. National Business Publications Ltd., Gardenvale, Quebec, Canada.

MACKEREL:

"Study on the larvae of fishes in the northeastern sea area along the Pacific Coast of Japan. II--Carangidae: jack-mackerel, scads and yellow-tails," by Shigeru Odate, article, Bulletin of the Tohoku Regional Fisheries Research Laboratory, vol. 20, 1962, pp. 94-105, illus., printed in Japanese with English summary. Tohoku Regional Fisheries Research Laboratory, Shiogama, Miyagi, Japan.

MALAYSIA:

Malayan Fishing Methods, by T. W. Burdon and M. L. Perry, Monograph on Malay Subjects No. 2, 174 pp., illus., printed, 1954. Malayan Branch, Royal Asiatic Society, Singapore, Malaysia.

MARINE ALGAE:

Reserves of Marine Algae and Their Exploitation, 96 pp., printed, 1964. Vsesoyuznoe Gidrobiologicheskoe Obshchestvo, Akademiia Nauk SSSR, Moscow, U.S.S.R.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

MARINE MAMMALS:

Determination of the Age of Commercial Pinnipeds and the Efficient Use of Marine Mammals, 57 pp., printed in Russian, 1964. Institut Morfologii Zhivotnykh, Akademiia Nauk SSSR, Moscow, U.S.S.R.

Articles from Vsesoyuznoe Soveshchanie po Izucheniyu Morskikh Mlekopitayushchikh, 1963 (Second All-Union Conference for the Study of Marine Mammals, 1963), printed in Russian. Akademiia Nauk SSSR, Moscow, U.S.S.R.:

"O vyrabotke edinoi metodiki izucheniya morskikh mlekopitayushchikh" (Developing a unified method for the study of marine mammals), by S. E. Kleineberg, V. M. Bel'kovich, and A. V. Yablokov, pp. 20-21.

"Zadachi regulirovaniya promysla morskikh mlekopitayushchikh v vokakh SSSR" (The tasks of the regulation of hunting of marine mammals in the waters of the U.S.S.R.), by A. D. Druzhinin, Yu. A. Vavilov, and M. L. Kashintsev, pp. 12-13.

MEXICO:

"Mexico: inaugura el Puerto Pesquero de Alvarado" (Mexico inaugurates the Fishery Port of Alvarado), article, Industrias Pesqueras, vol. 39, no. 907, Feb. 1, 1965, pp. 51-52, illus., printed in Spanish, single copy 40 ptas. (about US\$0.70). Industrias Pesqueras, Policarpo Sanz, 21-2^o, Vigo, Spain.

Presencia de la Comision Nacional Consultiva de Pesca (Work of the National Consultative Commission on Fisheries), by Fernando Castro y Castro, Documentos C. P. 3, 14 pp., printed in Spanish, Jan. 1964. Correo Privado, Ave. Juarez No. 30-103, Apartado Postal 6-685, Mexico, D. F., Mexico.

Puerto Pesquero Piloto de Alvarado (Pilot Fishery Port of Alvarado), 32 pp., illus., printed in Spanish. Banco Nacional de Fomento Cooperativo, S. A. de C. V., Mexico, D. F. Describes the new pilot fishery port of Alvarado, on Mexico's Gulf Coast. Discusses development of the Mexican fisheries, the decision to construct a fishery port on the Gulf of Mexico and selection of the site, fiscal and technical details of the project, operation of the port and associated processing plants, and its long-range objectives. Color photos show an aerial view of the port, a shot of fishing vessels at dockside, and scenes in the receiving room, freezing and packing sections, fish meal plant, and other sections.

Reports available from Comision Nacional Consultiva de Pesca, Mexico, D. F., Mexico.:

El Mercado de Productos Pesqueros en Mexico (The Market for Fishery Products in Mexico), by Jesus Perez Urunuela, 138 pp., illus., printed in Spanish, 1964.

Programa Integral para el Desarrollo de la Industria Pesquera en Mexico (Integral Program for the Development of the Fisheries Industry in Mexico), No. 1, 34 pp., printed, 1962.

MIDDLE ATLANTIC:

Scientific Fishery Investigations in the Middle Atlantic Region, by A. N. Probatov, E. S. Prosvirov, and

O. G. Riabikov, Translations (New Series) No. 52, 10 pp., illus., processed, 1964. (Translated from Russian, Soviet Fisheries Investigations in North European Seas, Moscow, 1960, pp. 405-412.) Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

MOLLUSKS:

"Experiments in mollusc husbandry," by A. D. Anisimov, article, Fishing News International, vol. 3, July-September 1964, pp. 216, 218-219, printed. Arthur J. Heighway Publications, Ltd., Ludgate House, 110 Fleet St., London EC4, England.

Mollusks--Problems of Theoretical and Applied Malacology (Conference for the Study of Mollusks), Collected Articles, 344 pp., printed in Russian, 1963. Zoologicheskii Institut, Akademiia Nauk SSSR, Moscow, U.S.S.R.

MOROCCO:

Establishing a Business in Morocco, OBR 65-17, 12 pp., printed, March 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

MUSSELS:

Aspects of Reproduction, Settling and Growth in the Mussel MYTILUS EDULIS PLANULATUS Lamarck, by B. Wisely, 6 pp., illus., printed, Dec. 1964. (Extracted from Journal of the Malacological Society of Australia, no. 8, Dec. 15, 1965, pp. 25-30.) The Australian Museum, College St., Sydney, N. S. W., Australia.

NETS:

"Comparative efficiencies between amilan net and otton net for small beam trawlers and surrounding seines," by C. Miyazaki, article, IPFC Current Affairs Bulletin, no. 41, Dec. 1964, pp. 14-27, illus., printed. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, Mahan Mansion, Phra Atit Rd., Bangkok, Thailand.

NORTH PACIFIC:

Outline of the Northern Water Fisheries, 95 pp., printed in Japanese, Feb. 1965. Japan Fisheries Society, 17-banchi, 1-chome, Nagata-cho, Chiyoda-ku, Tokyo, Japan.

NORWAY:

"Den Norske hermetikkindustri i 1964" (The Norwegian canning industry in 1964), by Trygve Orre and Ole Omland, article, Tidsskrift for Hermetikkindustri (Norwegian Cannery Export Journal), vol. 51, no. 1, Feb. 1965, pp. 49-53, printed in Norwegian and English. Reviews production and export of Norwegian canned fishery products in 1964. Covers the lamb, canned pack, and prices of kippered herring, brown small sild, mackerel, and shellfish. Discusses the export market, which showed an overall increase in both volume and value during 1964. However, exports to the United States declined, while those to the United Kingdom increased because of a reduction in import duties. Because of tightening world competition, canned fishery products, the Norwegian industry to reduce sales prices and the margin of profit was consequently diminished. Norwegian canners are

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

concerned about the outlook for sales to the European Common Market.

NOGWAY POUT:

Stocks of TRISOPTERUS ESMARKII (Nilsson) off North-west Scotland and in the North Sea, by D. F. Raitt, Marine Research 1965 No. 1, 24 pp., illus., printed, 7s. 6d. (about US\$1.05). Department of Agriculture and Fisheries for Scotland, Edinburgh, Scotland. (For sale by the Sales Section, British Information Services, 845 Third Ave., New York, N. Y. 10022.)

OCEANOGRAPHY:

Log of Data in World Data Center A: Oceanography, Suppl. No. 1 (Data received during the period, January to 30 June 1964), printed, 1964. World Data Center A: Oceanography, 1st and N Sts. SE., Washington, D. C.

Deep space: the oceans," by Barbara Tufty, article, Science News Letter, vol. 87, no. 3, Jan. 16, 1965, pp. 42-43, illus., printed, 15 cents. Science Service, Inc., 1719 N St. NW., Washington, D. C. 20036.

International Indian Ocean Expedition, by J. V. Eyendekkers, 9 pp., illus., printed. (Reprinted from The Australian Journal of Science, vol. 27, no. 1, Dec. 1964, pp. 153-161.) Division of Fisheries and Oceanography, Commonwealth Scientific and Industrial Research Organization, Cronulla, N.S.W., Australia.

Oceanographic instrumentation heads for major expansion," by Charles W. Covey, article, Under Sea Technology, vol. 6, no. 4, April 1965, pp. 20-21, printed, single copy \$1.00. Compass Publications, Inc., 617 Lynn Bldg., 1111 No. 19th St., Arlington, Va. 22209.

Oceanographical Observations in the Indian Ocean in 1962, H.M.A.S. DIAMANTINA (Cruise Dm 2/62), Oceanographical Cruise Report No. 15, 120 pp., illus., processed, 1964. Division of Fisheries and Oceanography, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia.

Progress in Oceanography, vol. 2, edited by Mary Sears, 271 pp., illus., printed, 80s. (about US\$11.20). Pergamon Press book. The Macmillan Company, 1200 Fifth Ave., New York, N. Y. 10011. Contains a research report on the distribution of phosphorus and oxygen in the Atlantic Ocean, 1957-58; an article about the distribution of zooplankton in the sea; a historical account of deep-sea expeditions and research vessels, 1873-1960; and a survey of marine bottom samplers.

"Soviet oceanography today," by T. K. Treadwell, Jr., article, United States Naval Institute Proceedings, vol. 91, no. 5, May 1965, pp. 26-37, illus., printed, single copy 75 cents. United States Naval Institute, Annapolis, Md. 21402.

Studies with the Woodhead Sea-Bed Drifter in the Southern North Sea, by Peter Woodhead, Laboratory Leaflet (New Series) No. 6, 8 pp., illus., processed, Feb. 1965. Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England.

Summary of the Work of the Second Indian Ocean Expedition of the Azov and Black Sea Research Institute of Marine Fisheries and Oceanography, by B. S. Solov'ev, JPRS 23394, 6 pp., illus., processed, 1964. (Translated from the Russian, Okeanologiya, vol. 3, no. 5, 1963.) Joint Publications Research Service, U. S. Department of Commerce, Bldg. Tempo E, E. Adams Dr., 4th & 6th Sts. SW., Washington, D. C. 20443.

"U. S. oceanographers visit the Soviet Union," by T. K. Treadwell, Jr., article, Oceanus, vol. 11, no. 3, April 1965, pp. 14-17, illus., printed. The Woods Hole Oceanographic Institution, Woods Hole, Mass.

World Beneath the Waves, by Walter Buehr, 112 pp., illus., printed, 1964, \$3.25. W. W. Norton & Co., 101 Fifth Ave., New York, N. Y. 10003. Discusses different aspects of the ocean and oceanography. For grades 4 to 7.

O.E.C.D.:

Subsidies and Other Financial Support to the Fishing Industries of OECD Member Countries (Adopted by the Committee for Fisheries and Approved by the Council at Its Meeting on the 21st July 1964), 254 pp., printed, Jan. 1965. O.E.C.D. Publications Office, 2, rue Andre-Pascal, Paris 16e, France. This report is the result of a decision of the Fisheries Committee of the Organization for Economic Cooperation and Development to devote most of its 1962/63 program to studying: "The policies of Member countries regarding subsidies and other financial support in order to determine whether they are compatible with rational production and possibilities of sales, and/or whether they are a hindrance to the free development of competition and to desirable cooperation between the various Member countries." Member countries of O.E.C.D., established on Sept. 30, 1961, are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The book is divided into 3 parts. First, the general part discusses overall aspects of support projects--their objectives, financial methods, costs, and results for fishing fleets, fishery production, and international trade. It also summarizes findings on the feasibility of the abolition of financial supports: "They tend to create, or to help to perpetrate, abnormal conditions for the industry and, after a time, there may be no other alternative but to maintain these artificial conditions. As time goes by, it becomes increasingly difficult to revert to free competition. The very existence of subsidies often calls for yet further subsidies both at national and international level." The second part presents recommendations for each country by the O.E.C.D. Council. The third part contains the country chapters--each consisting of a survey of the various support schemes such as aid to vessel construction, price supports for fishery products, loans from government funds for purchase of gear, and other projects; and a general evaluation of those projects in that country. The annexes include a summary list of financial support schemes for fishing industries in O.E.C.D. countries; and statistical tables showing landings in those countries, 1956-61. This is a basic reference book on government assistance to fisheries in Europe and North America, and will be invaluable

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

to administrators and of great interest to fishing industry people in those regions.

OREGON:

A Study of the Feasibility of Developing Small Boat Harbors in Six Oregon Counties, 106 pp., illus., processed, Feb. 1965, 50 cents. Area Redevelopment Administration, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) The purpose of the study was to determine the feasibility of developing small boat harbors and related marine facilities suitable for commercial fishing and recreational boating in 6 ARA-designated counties in the State of Oregon.

OYSTERS:

"Ancient oyster shells on the Atlantic Continental Shelf," by Arthur S. Merrill, K. O. Emery, and Meyer Rubin, article, *Science*, vol. 147, no. 3656, Jan. 22, 1965, pp. 398-400, illus., printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

Glucose Nutrition and Longevity in Oysters, by Larry Gillespie, R. M. Ingle, and Walter K. Havens, 10 pp., illus., printed, Dec. 1964. (Reprinted from *Quarterly Journal of the Florida Academy of Sciences*, vol. 27, no. 4, Dec. 1964, pp. 279-288.) Florida Academy of Sciences, University of Florida, Gainesville, Fla.

PACIFIC OCEAN:

A Conference on Joint Investigations of the Flora and Fauna of the Western Pacific, by Ia. I. Starobogatov, JPRS 23396, 4 pp., processed, 1964. (Reprinted from *Okeanologia*, vol. 3, no. 5, 1963.) Joint Publications Research Service, U. S. Department of Commerce, Bldg. Tempo E., E. Adams Dr., 4th & 6th Sts. SW., Washington, D. C. 20443.

Proceedings of the Tenth Pacific Science Congress, Honolulu, Hawaii, 1961, edited by Leonard D. Tut-till, 474 pp., illus., printed, 1963. Bishop Museum Press, Honolulu, Hawaii. Report of the 10th Pacific Science Association Congress, held at the University of Hawaii, Aug. 21-Sept. 6, 1961. Included in the section of biological sciences are listings of papers under the divisions of limnology and fresh-water fisheries and of marine biology and fisheries. Among reports of standing committees are those on conservation, fresh-water sciences (including limnology, fisheries, and biology subcommittees), and marine sciences (includes subcommittee on nomenclature of the seabottom). Contains several papers on biology and oceanography of the Pacific area.

PARASITES:

Parasitic Copepods from Marine Polychaetes of Eastern North America, by Jorgen Lutzen, *Travaux sur les Pêcheries du Québec* No. 7, 14 pp., printed in English with French abstract, 1964. Division des Pêcheries, Ministère de l'Industrie et du Commerce, Québec, Canada.

PERU:

Reports, processed in Spanish, of the Library, Instituto de Investigación de los Recursos Marinos, P. O. Box 3734, Lima, Peru. Limited distribution.:

Abundancia de los Huevos de Anchoveta (ENGRAULIS RINGENS) con Relación a la Temperatura de Mar en la Región de Chimbote (Abundance of Anchovy Eggs with Relation to the Temperature of the Sea in the Region of Chimbote), by Blanca Rojas de Mendiola, Informe No. 25, 39 pp., illus., 1964.

Análisis Técnico de la Industria de Harina de Pescado en el Perú (A Technical Analysis of the Peruvian Fish Meal Industry), by E. Arnesen and J. Sanchez, Informe No. 13, 32 pp., illus., 1963.

Aprovechamiento de la Materia Prima en la Elaboración de Harina de Pescado Tipo Integral, Estudio Técnico--Economico de Dos Metodos (Utilization of the Raw Material in the Production of Coarse Fish Meal. Technical Study--Economics of Two Methods), by T. Sparre and E. Arnesen, Informe No. 17, 20 pp., illus., 1963.

Costos y Beneficios en la Industria de la Pesca de Anchoveta 1962 (Costs and Profits of the Anchovy Industry, 1962), by I. Tilic, Informe No. 21, 65 pp., illus., 1963.

El Desarrollo de un Puerto Pesquero Modelo en el Departamento de Lambayeque--Conferencia Dada el 15 de Enero de 1964 en el Club Lambayeque, Lima (The Development of a Model Fishing Port in the Department of Lambayeque--Conference Held on January 15, 1964, in the Club Lambayeque, Lima), by T. Sparre, Informe No. 23, 16 pp., illus., 1964.

La Industria Pesquera de la Anchoveta--Informe Presentado al Gobierno del Perú en Setiembre 1962 (The Anchovy Fishing Industry--Report Presented to the Government of Peru in September 1962), Informe No. 11, 23 pp., illus., 1963.

Marcación de Cachalotes Frente al Perú (Marking of Sperm Whales Along the Coast of Peru), by Jorge Mejía, Informe No. 26, 20 pp., illus., 1964.

El Mercadeo del Pescado en Lima: Preferencias de los Consumidores (The Marketing of Fish in Lima: Consumer Preferences), by W. F. Doucet and J. H. García C., Informe No. 19, 71 pp., illus., 1963.

Métodos Analíticos para el Control de Producción de Harina y Aceite de Pescado (Analytical Methods for the Control of Fish Meal and Oil Production), by Sparre, J. Sanchez, and R. Lam, Informe No. 20, pp., 1963.

La Pesca de la Anchoveta: Estadística de Pesca y Esfuerzo durante los Meses de Enero-Junio de 1963 (The Anchovy Fishery: Statistics of the Fishery and Fishing Effort, January-June 1963), by Isaac Vasquez Aguirre and I. Tzukayama, 39 pp., illus., 1964.

PHILIPPINES:

Fisheries Statistics of the Philippines, 1963, 109 pp., printed, 1964. Fisheries Economics and Statistics Section, Fisheries Research Division, Philippine Fisheries Commission, Department of Agriculture and Natural Resources, Quezon City, Philippines.

"Good catch in Philippines," by William P. Hunt, article, *International Commerce*, vol. 71, no. 16, Apr. 19, 1965, pp. 7-8, illus., printed, single copy 35 cents.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Reviews the current situation in the Philippine fishing industry; origin and operation of various types of gear used; the need for refrigeration facilities; and possibilities for sale of United States vessels, gear, and machinery. The Philippine Republic has vast fishery resources but the domestic industry is still undeveloped; production of fishery products is far below national requirements, and the country is still importing about \$12 million worth of canned fish each year. However, there were plans for two canneries under construction to start production by late 1965. The small boat industry is developing to the extent that new boatyards are being built and some of the older plants are being enlarged. One corporation from Negros is interested in purchasing three combination vessels for purse seining and trawling. Philippine business firms have indicated many other needs: pumps for unloading fish; machines to manufacture nets; facilities to can tuna, sardines, and other products; and dehydrators and mill grinders to produce fish meal.

PHYSIOLOGY:

"Application of gas-liquid chromatography to the fat metabolism of fish," by Raul O. Peluffo, article, Chemical Abstracts, vol. 59, Nov. 25, 1963, Abstract 13163b, printed. American Chemical Society, 525 16th St. NW., Washington, D. C. 20006.

POLLUTION:

"Report on Investigation of Fish Kills in Lower Mississippi River, Atchafalaya River, and Gulf of Mexico," 26 pp., processed, 1964. Division of Water Supply and Pollution Control, Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. 20201.

PROBLEMS IN FISHERIES:

"Harvest by Wire Nets in a Stream Impoundment," by Carl Baker, Publication W-323, 14 pp., illus., printed, 1963. Division of Wildlife, Ohio Department of Natural Resources, Columbus, Ohio.

"Problems in Pond Fishery," Collected Articles, 203 pp., printed in Russian, 1963. Rybnoe Khoziaistvo, Krasnosel'skaia 17, Moscow B-140, U.S.S.R.

REPRODUCTION:

"A stranded porpoise released in the open sea," by Kenneth S. Norris, article, Science, vol. 147, no. 3661, p. 26, 1965, pp. 1048-1050, printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

SCIENCE:

"Protein typing of some authentic fish species by disc electrophoresis," by Vivian M. Mancuso, article, Journal of the Association of Official Agricultural Chemists, vol. 47, Oct. 1964, pp. 841-844, printed. Association of Official Agricultural Chemists, P. O. Box 540, Benjamin Franklin Station, Washington, D. C. 20004.

TECHNIQUE:

"Measurement of hypoxanthine in fish as a method of assessing freshness," by John Spinelli, M. W. Ek-

lund, and David Miyauchi, article, Journal of Food Science, vol. 29, no. 6, 1964, pp. 710-714, printed. Institute of Food Technologists, 510-522 N. Hickory St., Champaign, Ill.

RADIATION PRESERVATION:

"Radiation preservation of foods," by Ferdinand P. Mehrlich, article, Science, vol. 147, no. 3665, March 26, 1965, pp. 1600, 1602-1603, printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005. Discusses a comprehensive review of radiation preservation of foods research activities throughout the world given at an international conference held Sept. 27-30, 1964, in Boston, Mass. Among other topics covered were the areas of study pursued by the U. S. Atomic Energy Commission and the Bureau of Commercial Fisheries in the field of radiation microbiology of marine products: (1) shifting ecology of the irradiated flora due to variation in irradiation resistance and the unique spoilage patterns resulting; (2) whether significant numbers of microorganisms which survive are mutants, and what their disease-producing role, if any, is; (3) extent of increase in radioresistance; and (4) cooperating radiolethal effects of food additives (such as nitrates, sodium chloride, antibiotics), concomitant heat, and other agents.

REFRIGERATION:

"Marine refrigerating equipment of Japanese fishing vessels," by M. Seigoro Chigusa and others, article, Bulletin de L'Institut International Du Froid, vol. 45, no. 1, 1965, pp. 25-30, printed. Institut International Du Froid, 177, Blvd., Malesherbes, Paris, France.

ROE:

"Processing Cod Roes," by A. McK. Bannerman, Torry Advisory Note No. 18, 8 pp., printed, Aug. 1964, Torry Research Station, Department of Scientific and Industrial Research, 135 Abbey Rd., Aberdeen, Scotland.

SALMON:

"Statistics on Salmon Sport Fishing in the Tidal Waters of British Columbia, 1964," 26 pp., processed, 1964. Department of Fisheries of Canada, 1155 Robson St., Vancouver 5, B. C., Canada.

Available from Japan Fisheries Resource Conservation Association, 6th Fl., Zenkoku Choson Kaikan Bldg., 1-17, Nagata-cho, Chiyoda-ku, Tokyo, Japan. Printed in Japanese.

"Pacific Salmon in the Northern Waters -- Conditions of Stocks," Fisheries Research Series 6, No. 3, by Tomonari Matsushita, 44 pp., illus.

--Distribution and Migration, by Tomonari Matsushita, Fisheries Research Series 6, No. 2, 76 pp., illus.

Available from the Japanese Fisheries Agency, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan, printed in Japanese.

"Artificial Propagation and Planting of Salmon in Sakhalin," by Osamu Sano, Rakusai Separate No. 634, 6 pp., illus., Jan. 1964.

"Observations on Salmon Escapement in the Soviet Far East," by Osamu Sano, Rakusai Separate No. 636, 3 pp., illus., Aug. 1964.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

SARDINES:

The Pilchard of South West Africa (SARDINOPS OCELLATA)--the Benguela Current off South West Africa, by G. H. Stander, Investigational Report No. 12, 120 pp., illus., printed, 1964. Marine Research Laboratory, Administration of South West Africa, Windhoek, South West Africa.

SCALLOPS:

Notes on Escallops and Details of the Baird Sledge Dredge and Its Handling, Laboratory Leaflet (New Series) No. 5, 10 pp., illus., processed, Feb. 1965. Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Burnham-on-Crouch, Essex, England.

Scallop Survey New Brunswick, 1964, 7 pp., printed, 1964. Department of Fisheries, Ottawa, Canada.

"Seasonal variations in the sterol, fat and unsaponifiable components of scallop muscle," by D. R. Idler, T. Tamura, and T. Wainai, article, Journal of the Fisheries Research Board of Canada, vol. 21, Sept. 1964, pp. 1035-1042, printed, single copy C\$2. Queen's Printer and Controller of Stationery, Ottawa, Canada.

SEA LION:

"Underwater visual discrimination by the California sea lion," by Ronald J. Schusterman, Winthrop N. Kellogg, and Charles E. Rice, article, Science, vol. 147, no. 3665, March 26, 1965, pp. 1594-1596, illus., printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

SEALS:

Collection of Scientific Papers 1962. The Greenland Seal and Hooded Seal, 138 pp., printed in Russian, 1963. Severnoe Otdelenie, PINRO, Knigoizdat, Archangel, U.S.S.R.

Seals of the World, by Judith E. King, 170 pp., illus., printed, 1964, 11s. plus postage (about US\$1.70). Trustees of the British Museum (Natural History), Cromwell Rd., London S.W.7, England. The biology of seals is covered quite extensively in this book. The author in her introduction points out that "seal" is a term that is used very loosely, and this group of animals can easily be subdivided and the members called, more precisely, sea lions, fur seals, and true seals. The first part of the book deals with the details of this classification and lists the common and scientific names of all 32 species. Then an account is given of each seal, its distribution and general life history, food, habits, and commercial exploitation. Described are the sea lions of the North and South, fur seals (including the Pribilof and southern fur seals), walrus, true seals of the North, Antarctic seals, and monk, elephant, and hooded seals. The chapters that follow deal with distribution and currents; external shape and locomotion; skin, fur, molt, temperature; skull and skeleton; dentition and age determination; alimentary canal, liver, kidney; respiratory system; vascular system; reproductive organs; brain and nervous system; senses; diving; and fossils. Appendices include a list of internal and external parasites, and the origins of the scientific names. Also included is a list of references for those interested in fur-

ther reading. A frontpiece shows some early illustrations of seals. Anyone interested in learning about seals will find a wealth of information in the book.

-J. P.

SEYCHELLES ISLANDS:

The Fishes of Seychelles, by J. L. B. Smith and Margaret Mary Smith, 215 pp., illus., printed, 1963. Department of Ichthyology, Rhodes University, Grahamstown, Republic of South Africa.

SHARKS:

"Daredevil sport--shark tagging," by Jack Denton Scott, article, Sports Afield, vol. 153, no. 3, March 1965, pp. 36-37, 84-85, illus., printed. The Hearst Corp., 57th St. at 8th Ave., New York, N. Y. 10019.

SHRIMP:

"The shrimp fishery of Alaska," by George Y. Harbo Jr., article, Proceedings of the Gulf and Caribbean Fisheries Institute, Sixteenth Annual Session, pp. 71, printed, Nov. 1963. Gulf and Caribbean Fisheries Institute, The Marine Laboratory, University of Miami, 1 Rickenbacker Causeway, Miami 49, Fla.

SOUTH AFRICA REPUBLIC:

Fisheries Development Corporation of South Africa Limited (Covering Period 1st October, 1963, to 30 September, 1964), 16 pp., printed in Afrikaans and English, March 17, 1965. Fisheries Development Corporation of South Africa Ltd., Seafare House, Orange St., Cape Town, Republic of South Africa. Presents brief summaries of the state of the inshore fisheries for anchovy and pilchards; production of fish meal and oil, canned fish, frozen pilchardlets, and cooked and live spiny lobsters; and activities of the Corporation in shrimp, tuna, and whale investigations, construction and maintenance of fishing harbors, and related areas of interest. Also included is a review of the Corporation's financial condition.

SPINY LOBSTER:

An Economic Survey of the Western Australian Spiny Lobster Industry, 73 pp., illus., processed, 1964. Fisheries Branch, Department of Primary Industries, Canberra, A.C.T., Australia. In Oct. 1963, the Department of Primary Industries, in collaboration with the Western Australian Department of Fisheries and Fauna, began field work on an economic study of levels of costs and incomes of spiny lobster fishermen during the financial year 1962-63, prior to introduction of limits on the number of lobster traps to be used on each vessel. This report presents findings of that study, the first of its type conducted in the Australian fishing industry. General surveys covered include technical aspects of the industry, economics of spiny lobster fishing, and operating costs and profits of freezer vessels.

Let's Call the Spiny Lobster "Spiny Lobster", by Harold W. Sims, Jr., 2 pp., printed, 1965. (Reprinted from Crustaceana, vol. 8, part 1, 1965, pp. 10-11). Florida Board of Conservation, Marine Laboratory, St. Petersburg, Fla.

Notes on Postlarvae of PANULIRUS ARGUS, by Harold W. Sims, Jr., Robert M. Ingle, and Harold W. Sims, Jr., 9 pp., illus., printed, 1964. (Reprinted from Journal of the Marine Biological Association of the United Kingdom, vol. 44, part 1, 1964, pp. 1-9).

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Journal of the Florida Academy of Sciences, vol. 27, no. 4, Dec. 1964, pp. 289-297.) Florida Academy of Sciences, University of Florida, Gainesville, Fla.

PAGE:

Effect of temperature on the spoilage of wet fish. I--Storage at constant temperatures between $-1^{\circ}\text{C}.$ and $25^{\circ}\text{C}.$, by C. R. Spencer and C. Baines, article, Food Technology, vol. 18, no. 5, 1964, pp. 175-179, printed, single copy \$1.50. Garrard Press, 510 No. Hickory, Champaign, Ill. 61823.

GEON:

Season Fishery in the Reservoirs of the U.S.S.R., Serial from the All-Union Conference, 20-30 March 1961, 207 pp., printed in Russian, 1963. Akademiya Nauk SSSR, Moscow, U.S.S.R.

VEN:

Foreign Trade Regulations of Sweden, by Paul Lienhard, OBR 65-14, 12 pp., printed, March 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

NOLOGY:

Technology of Fish Products, Collected Articles, 71 pp., printed in Russian, 1964. Nauchno-Issledovatel'skii Institut Rybnogo Khoziaistva i Okeanografii, Leningrad, U.S.S.R.

OS:

Water fish poison: a cholinesterase inhibitor," by Kwan-Ming Li, article, Science, vol. 147, no. 3655, March 26, 1965, pp. 1580-1581, illus., printed, single copy 35 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave., Washington, D. C. 20005.

Research on Ciguatera in the Tropical Pacific, by Albert H. Banner, Contribution No. 207, 14 pp., printed, 1963. (Reprinted from Proceedings of the Pacific and Caribbean Fisheries Institute, 16th Session, 1963.) Hawaii Marine Laboratory, Honolulu, Hawaii.

TLERS:

Trälare" (Our trawlers), by Heikki Pitkänen, article, Fiskeritidskrift for Finland, vol. 8, no. 5-6, 1964, pp. 108-112, illus., printed in Swedish. (Also in Finnish, "Troolareistamme," in Suomen Kalasehti, no. 10, 1964, pp. 252-257.) Fiskeriföreningen i Finland, Fabiansgatan 5 A 7, Helsinki, Finland.

LING:

Trälssystem demonstreras vid FAO-kongressen" (Trawling systems demonstrated at FAO Congress), article, Svenska Västskustfiskaren, vol. 35, no. 3, March 10, 1965, pp. 96-98, illus., printed in Swedish. Svenska Västskustfiskarnas Centralförbundet, Ekonomiskottet Postbox 1014, Göteborg 4, Sweden.

Investigation of Tuna Long-Line Fishing in Japan and the Hawaiian Islands, by M. J. Beare, P. D.

Lorimer, and J. S. Hynd, 60 pp., illus., printed, 1963. Fisheries Division, Department of Primary Industry, Canberra, Australia.

"La pesca del atún en Chile" (The tuna fishery in Chile), article, Puntal, vol. 12, no. 132, March 1965, p. 21, illus., printed in Spanish, single copy 12 ptas. (about US\$0.20). (Reprinted from Pesca y Marina, Tijuana, Mexico.) Puntal, Apartado de Correos 316, Alicante, Spain.

Report of the First Session FAO Expert Panel for the Facilitation of Tuna Research, Rome, 8-12 June, 1964, FAO Fisheries Reports No. 18, 23 pp., printed, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, Rome, Italy.

"A report on the survey of tuna," by A. G. York, article, Commercial Fishing, vol. 3, no. 7, March 1965, pp. 31, 33, 34, illus., printed, Trade Publications Ltd., 47 Lewis Eady Bldg., Queen St., Auckland, New Zealand. Presents results of 15 months of tuna investigations by the New Zealand Marine Department. In general, tuna are temperature-conscious and usually migrate to inshore waters via defined "warm water highways." Wherever a "thermocline" (a cold water layer of varying depth) is present, a depth barrier for tuna is formed. Therefore, the most efficient method of fishing must be based on knowledge of the presence and depth of the thermocline. In addition to water temperature changes recorded in the course of several cruises, information on salinity, acoustics, catching techniques, and general distribution of the four species common to New Zealand waters (southern bluefin, albacore, skipjack, and yellowfin) is presented in this article.

Tuna Data, no. 40, Jan. 1965, 16 pp., illus., printed in Japanese. Fisheries Research Laboratory, Tokai University, 1,000 Orido, Shimizu-shi, Shizuoka Prefecture, Japan. Includes table on fishing conditions (main fishing grounds; number of tuna vessels operating in those areas, and catch) in the Pacific and Indian Oceans in January 1965; figures on winter albacore long-line fishing and ocean conditions off Japan Jan. 1-17, 1965; skipjack fishing conditions near Palau Islands in Jan.-Mar. 1964; and quantity and price of tuna landed at Shimizu and Yaizu, Oct.-Dec. 1964.

Articles from Bulletin of the Tokohu Regional Fisheries Research Laboratory, vol. 20, 1962, printed in Japanese with English summary. Tokohu Regional Fisheries Research Laboratory, Shiogama, Miyagi, Japan.

"On the abundance and fluctuation of the skipjack and albacore migrating to the seas adjacent to Japan. I," by Tsuyoshi Kawasaki and Moriya Anraku, pp. 33-44, illus.

"Skipjack biting by the mathematical estimate," by Masakazu Yao, pp. 28-32, illus.

TURKEY:

Balik ve Balikcilik (Fish and Fishery), vol. 13, no. 3, March 1965, 32 pp., illus., printed in Turkish with English table of contents. Et ve Balik Kurumu G. M., Balikcilik Mudurlugu, Besiktas, Istanbul, Turkey. The articles included are: "Shrimp trawl," by Tekin

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

Mengi; "The role of fish in animal feeding and nutritional contribution of fish products (Part III)," by Macide Akgunes; "1964 export of aquatic products, fish products and by-products;" and "General Fisheries Council for the Mediterranean (Part II)," by Sardan Barlas.

U.S.S.R.:

All-Union Conference on the Problems of Commercial Utilization of Plant-Eating Fishes in the Reservoirs of the U.S.S.R., 227 pp., printed in Russian, 1963, Akademiia Nauk Turkmen SSR, Ashkabad, U.S.S.R.

Distribution of Catch in the Georges Bank Area and on the West Coast of Africa, 107 pp., printed in Russian, 1963, Promyslovnyi Ezhegodnik, Kalininograd, U.S.S.R.

Fish and Fish Products (Auxiliary Material), Official Edition, 340 pp., printed in Russian, March 1, 1964, Izdatel'stvo Standartov, Moscow, U.S.S.R.

"Loviisan kalanmyyntiosuuskunnan opintomatka Ruotsiin 2--9. 9. 1963" (Fish selling trip to Russia 2--Sept. 9, 1963), article, Suomen Kalastuslehti, no. 5, 1964, pp. 130-146, illus., printed in Finnish, Suomen Kalastusyhdistyksen, Fabianinkatu 5 A 7, Helsinki, Finland.

Materialy Rybokhoziaistvennykh Issledovaniy Severnogo Basseina--Vypusk IV (Fishery Research in the Northern Basin, Part 4), 150 pp., printed in Russian, 1964, Gosudarstvennyi Komitet po Rybnomu Khoziaistvu pri SNKH SSSR, Poliarnii Nauchno-Issledovatel'skii i Proiektnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knopovicha (PINRO), Murmansk, U.S.S.R. Some of the articles are: "Natural, fishing and total mortalities of cod of the Barents Sea stock in 1946-1963," by V. P. Ponomarenko; "The strength of Atlanto-Scandinavian herring depending on the secular changes in climate," by I. G. Judanov; "Results of determining the abundance of young cod in the Barents Sea in the autumn-winter period of 1963/64," by G. P. Nizovtsev; "Results of determining the abundance of young haddock in the Barents Sea in winter 1963/64," by Z. P. Baranova; "The spawning efficiency and estimation of the strength of Atlanto-Scandinavian herring in 1962 and 1963," by I. G. Judanov; "Distribution and by-catch of young haddock in the southern Barents Sea," by A. S. Baranenkova and N. A. Khaldinova; and "Economic assessment of introducing the new mechanization and automation technique in the fishing industry in the north of our country (1966-1970)," by L. A. Ostrovskaya.

"Le nouveau magasin frigorifique du port Russe de Nahodka (The new refrigerated warehouse at the Russian port of Nahodka), article, La Pêche Maritime, vol. 44, no. 1044, March 1965, pp. 180-182, illus., printed in French, single copy 14 F (about US\$2.85). Les Éditions Maritimes, 190, Blvd. Haussmann, Paris 8e, France.

Recent State of Sakhalin Fisheries, by Osamu Sano, Rakusai Separate No. 638, 4 pp., illus., printed in Japanese, Jan. 1965, Japanese Fisheries Agency, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan.

Trudy PINRO, Vypusk XVI, 1964--Issledovaniia po Promyslovoi Okeanografii (Research on Oceanographic Problems), 288 pp., printed in Russian, Poliarnii Nauchno-Issledovatel'skii i Proiektnyi Institut Morskogo Khoziaistva i Okeanografii im. N. M. Knopovicha, Moscow, U.S.S.R. A few of the articles are: "Long term observations on the plankton distribution during the period of spring-summer feeding of herring in the Norwegian and Greenland Seas (1951-1962)," by E. A. Pavshchik; "On the conditions of formation of the Arcto-Norwegian cod stock of the 1959, 1960 and 1961 year-classes during the first year of their life," by A. S. Baranenkova and N. S. Khokhlina; "On the regularities of the summer migrations of cod in the southern part of the Barents Sea," by G. K. Konstantinov and A. I. Mukhin; "Effects of the hydrological regime and feeding conditions on the formation and abundance of the year-class of cod during the life of its yearlings in the near-bottom layers of the Barents Sea," by I. Ya. Ponomarenko; and "To the problem of the interrelation between the distributions of temperature, oxygen and fish concentrations in some commercial areas of the Barents and Norwegian Seas," by M. M. Adrov.

Voprosy Ikhtiologii, vol. 4, no. 2 (31), 1964, 196 pp., printed in Russian, Akademiia Nauk SSSR, Ikhtologicheskaiia Komissia, Moscow, U.S.S.R. Some of the articles are: "Role of chemicals in fishery," by S. Karzinkin; "Some data on the development and condition of world fisheries," by P. A. Moiseev; "On ichthyological sampling for estimation of fish population dynamics," by T. F. Dementyeva; "Peculiarities in abundance dynamics of Pacific Ocean pink salmon Oncorhynchus gorbuscha (Walbaum)," by Yu. E. Lazarev; "Effect of water temperature on fish resources in trawling in the Barents Sea," by K. G. Konstantinov; and "Tagging of autumn chum Oncorhynchus ketula (Berg) and pink salmon Oncorhynchus gorbuscha (Walbaum) in Amur firth," by M. V. Krykhtin. A few of the other articles are: "Spawning conditions and development of Oncorhynchus masou (Brevoort)," by A. N. Kanidiev; "Pneumatic egg counter and projection microscope for measuring fish eggs," by M. I. Podgorny and O. I. Sosnov; "On the behaviour of some Azov fishes in trawl," by D. V. Davydov; "On feeding of cod Gadus morhua maris (Derjg. in western White Sea (Velikaya Salma)," by E. A. Izvekova; and "Peculiarities in 1961 spawning of Danube herring Caspialosa caspia nordica (Antipa)," by A. M. Kukuradze.

VESSELS:

Articles from IPFC Current Affairs Bulletin, no. 1, Dec. 1964, printed, Indo-Pacific Fisheries Commission, Food and Agriculture Organization of the United Nations, Maliwan Mansion, Phra Atit Rd., Bangkok, Thailand.:

"Economics of outboard motors in small fishing boats in Saurashtra (India)," by K. Chidambaram, pp. 1-4.

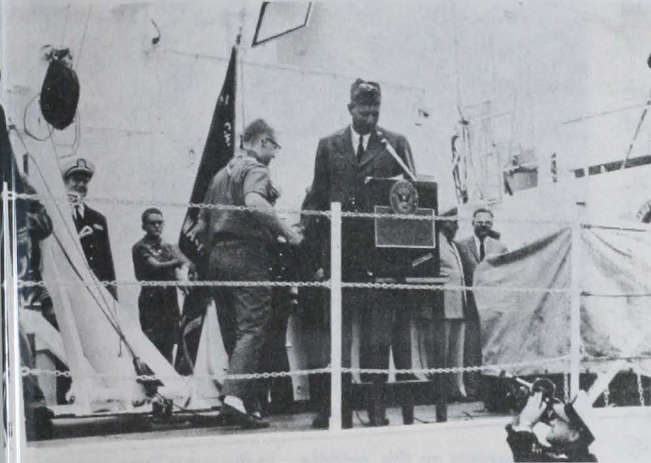
"Fiberglass reinforced plastic in building small fishing boats," by Erik Estlander, pp. 1-7, illus.

VESSEL STABILITY:

Theoretical and Practical Problems on the Stability of Marine Vessels, 144 pp., printed in Russian, Morskoj Transport, Moscow, U.S.S.R.

MERIT BADGE IN OCEANOGRAPHY AWARDED TO BOY SCOUTS

A new honor--the Merit Badge in Oceanography--was recently awarded for the first time to more than 40 Boy Scouts and Explorers. At ceremonies aboard the oceanographic research vessel USNS Gilliss of the Military Sea Transport Service (MSTS) at Washington, D. C., the Scouts and Explorers were presented their badges in the new science by Rear Admiral Denys W. Knoll, Oceanographer of the United States Navy.



Boy Scout being awarded Merit Badge in Oceanography aboard research vessel USNS Gilliss.

Captain James M. Gilliss, USN, whose scientific pioneering as Superintendent of the Naval Observatory in the Civil War Years from 1861 to 1865 led to a greater knowledge of the sea. (Sealift, MSTS, Washington, D. C., January 1965.)

The new Merit Badge in Oceanography was established in 1963 with the cooperation of the Chief of Naval Operations, the Oceanographer of the Navy, scientists from the U. S. Coast and Geodetic Survey, and other private institutions and universities.

It was most fitting that the Boy Scouts and Explorers were awarded the badges aboard the USNS Gilliss while the vessel was visiting the Nation's Capital, following oceanographic surveys in the Caribbean. She was named



GUIDE TO TROPICAL ATLANTIC SEA BIRDS

A contract with the Smithsonian Oceanographic Sorting Center to prepare and publish an illustrated guide to the birds of the tropical Atlantic has been negotiated by the U. S. Bureau of Commercial Fisheries Biological Laboratory, Washington, D. C. The publication will include descriptions of each of the common species of sea birds of the tropical Atlantic along with both black and white illustrations and color pictures to assist in identification of those birds by scientists and crew members aboard the Laboratory's research vessels. Specimens of sea birds were collected by laboratory staff members aboard the Bureau's research vessel Geronimo. An ornithologist of the Smithsonian Institution made one collection trip aboard the Bureau's research vessel.

Interest of fishery scientists in sea birds is generated by the fact that, in tropical waters, a "working" flock of birds usually means a tuna school. The tuna feed on shoals of small fish which they crowd to the surface. When tuna are at the surface the birds work low over the water in a frenzy of diving, swooping, and circling. Such bird flocks can be seen at distances of from 3 to 5 miles, whereas the best sonar currently available can pick up tuna schools at a distance of less than 1 mile.